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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,928	10/12/2000	Arihiro Takeda	2803.64683	7460

7590

03/25/2003

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EXAMINER

NGUYEN, DUNG T

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 03/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/689,928

Applicant(s)

Takeda et al.

Examiner

Dung Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jan 6, 2003
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 150, 151, 154-160, and 162-170 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 150, 151, 154-160, and 162-170 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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Response to Amendment

Applicant's amendment dated 01/06/2003 has been received and entered.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 150-151, 154-160 and 162-170 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Koma, US Patent No. 5,608,556, in view of Hirata et al., US Patent No. 5953093, as stated in the previous office action.

Applicants contend that neither Koma nor Hirata et al., whether taken alone or in combination, disclose or suggest a liquid crystal display (LCD) device having at least one protrusion to regulate azimuths angles of liquid crystals (amendment, page 3). In particular, Koma fails to show the use of any protrusions to regulate azimuth orientation of liquid crystal molecules since Koma discloses slits that are not equivalent to protrusions as azimuth regulating means in a vertical aligned (VA) device; and Hirata teaches away from the present invention since Hirata fails to teach or suggest protrusions as regulating means for regulating azimuths of liquid crystal orientation since Hirata teaches only an average orienting direction (e.g., pre-tilt). The Examiner agrees that Koma only teaches slits instead of protrusions as claimed; however, regarding the Hirata reference, the Examiner respectfully disagrees with the applicant's viewpoint. In particular, in the Hirata et al. device, when in off state (no voltage applied), liquid crystal

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molecules in the liquid crystal layer are controlled by an alignment layer (i.e., pre-tilt) and when in on state (voltage applied between two electrode), the liquid crystal molecules would be controlled by protrusions (line-patterned insulating film 32d) (see col. 12, lines 44-65) in order to improve viewing angle. In other words, Hirata et al. do disclose protrusions as regulating means for regulating azimuths of liquid crystal orientation when a voltage is applied to the liquid crystal (emphasis added). Furthermore, as stated in the previous office action, the Koma reference does disclose a vertical oriental film can be formed in a TN-LCD device (col. 1, lines 45-55). Therefore, the combination of Koma and Hirata et al. would have been obvious to form protrusion in the Koma's device as stated in the previous office action in order to improve viewing angle (Hirata et al., col 12, ln. 22).

Accordingly, the rejection of the above claims stand.

Response to Arguments

3. Applicant's arguments filed 01/06/2003 have been fully considered but they are not persuasive as noted above.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

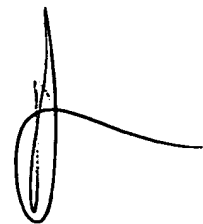
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A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner, should be directed to Examiner Dung Nguyen whose telephone number is (703) 305-0423. The fax phone number for this Group is (703) 308-7722.

Any information of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 308-0956.

DN
03/24/2003

A handwritten signature in black ink, consisting of a large, stylized capital 'K' followed by a horizontal line extending to the right.

**KENNETH PARKER
PRIMARY EXAMINER**